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The Quality of Life following allogeneic Hematopoietic Stem Cell Transplantation – a retrospective Study of Czech Transplant Centres

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Background & Aims

Although allogeneic haematopoietic stem cell transplantation (allo-HSCT) offers a unique curative potential, it may be connected with high treatment-related morbidity and mortality. Besides many organ complications, allo-HSCT may significantly affect quality of life (QOL).

Methods

Between January 2011 and December 2012, five hundred and ninety patients (pts) from 6 transplant centers in the Czech Republic filled in the questionnaire for the quantitative measurement of QOL using Functional Assessment of Cancer Therapy-General (FACT-G) version 4. The median age at allo-HSCT was 43 years (range: 1.7 – 71.0), the median time from allo-HSCT to questionnaire completing was 3.8 years (range: - 0.2 – 21.6). The earliest allo-HSCT was performed in November 1989, the last in September 2012. In this retrospective study, we investigated the impact of various factors on the QOL after allo-HSCT. Only data from patients who were more than 3 months after allo-HSCT were used for the multivariate analysis.

Table 1 Patient s characteristics

Parameter		N	%
Total number of patients		590	100.0
Gender	Males	325	55.1
	Females	265	44.9
Diagnosis	Acute leukemia	270	45.8
	BMF	36	6.1
	CML	74	12.5
	MDS/MPS	110	18.6
	Lymphoproliferation	93	15.8
	Others	7	1.2
Age	≤ 0;18> years	78	13.2
	(18; 30> years	88	14.9
	(30; 40> years	82	13.9
	(40; 50> years	136	23.1
	(50; 60> years	153	25.9
	(60; 70.8> years	53	9.0
Time from diagnosis	(0; 1> year	356	60.3
to allo-HSCT	(1; 2> years	94	15.9
	(2; 3> years	41	6.9
	(3; 5> years	36	6.1
	(5; 23.3> years	63	10.7
Disease stage at allo-HSCT	early	337	57.1
	intermediate	129	21.9
	advance	76	12.9
	NA	48	8.1
Time from allo-HSCT to questionnaire completing			
	(before; 14 days> after HSCT	57	9.7
	(14 days; 100 days> after HSCT	23	3.9
	(100 days; 1.0 year> after HSCT	73	12.4
	(1.0; 2.0> years after HSCT	74	12.5
	(2.0; 3.0> years after HSCT	37	6.3
	(3.0; 5.0> years after HSCT	86	14.6
	(5.0;.21.6> years after HSCT	240	40.7

Figure 1 Total FACT-G score at different time periods after allo-HSCT (n=590)

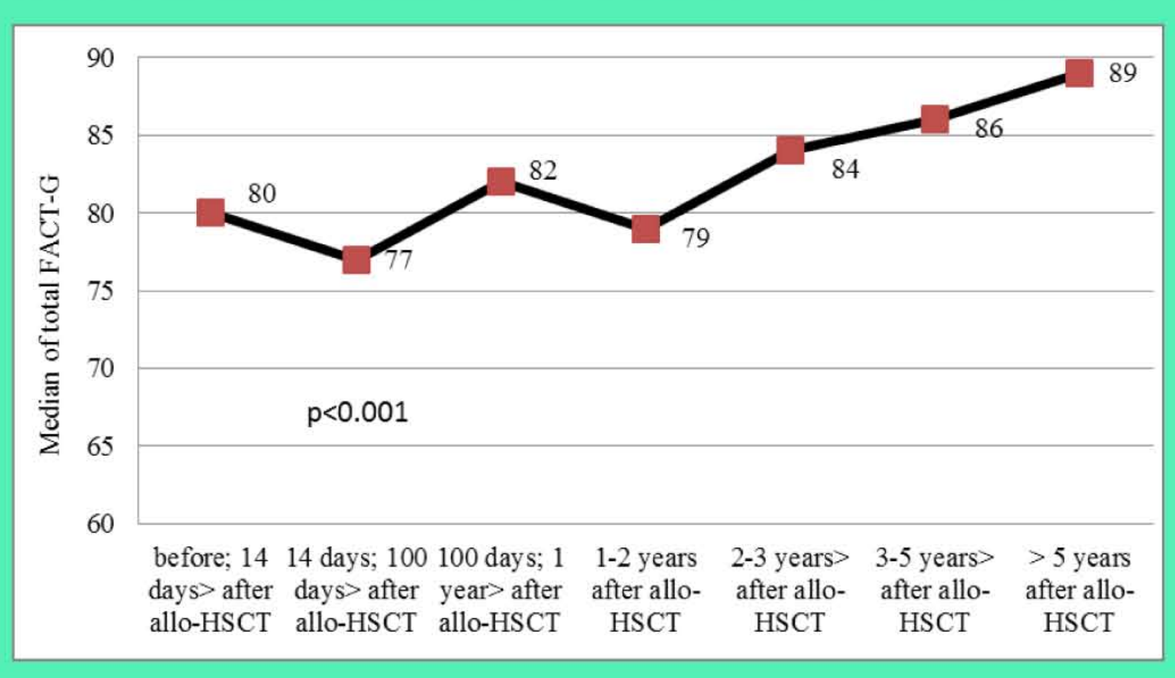

Table 3 Overall results of FACT-G and each dimension

Parameter	N	Mean	SD	Median	Min	Max
Physical well-being (PWB)	590	21.9	5.2	23.0	5.0	28.0
Social /family well-being (SWB)	588	23.0	4.1	24.0	7.0	28.0
Emotional well-being (EWB)	586	18.0	4.1	19.0	4.0	24.0
Functional wel-being (FWB)	588	20.5	5.2	21.0	2.0	28.0
Total score	590	83.4	14.4	85.0	29.0	108.0

Table 2 Characteristics of patients after allo-HSCT (n=533)

Parameter		N *	%
Conditioning	myeloablative	340	64.4
	reduced intensity	188	35.6
Donor	related	209	39.2
	unrelated	324	60.8
Graft	bone marrow	143	26.8
	PBPC	383	71.9
	others	7	1.3
TBI	yes	167	31.4
	no	365	68.6
Relaps after allo-HSCT	yes	66	12.4
	no	467	87.6
Acute GVHD	no	286	54.8
	grade I	62	11.9
	grade II	151	28.9
	grade III-IV	23	4.4
Chronic GVHD	no	287	56.3
	limited	118	23.1
	extensive	101	19.8

* patients with available data

Table 4 Multivariate analysis (n=454)

Parameter	estimate	p-value
Age	-0.094	0.048
aGVHD grade I	0.541	ns
aGVHD grade II	-5.418	<0.001
aGVHD grade III +IV	-4.639	ns
cGVHD extensive (last 6 months)	-6.382	0.006
cGVHD limited (last 6 months)	-5.440	0.002
Time from allo-HSCT – questionnaire completing	0.631	<0.001
Diagnosis CML	-1.984	ns
Diagnosis lymphoproliferation	2.228	ns
Diagnosis MDS/MPS	3.592	0.043
Disease stage – intermediate	-1.826	ns
Disease stage – advanced	-3.486	ns
Gender – male	-1.740	ns
Total body iradiation - yes	2.868	ns

SUMMARY & CONCLUSIONS

The overall results of the total FACT-G as well as the results of each specific dimension showed a value in the highest quartile of the scoring scale. In multivariate analysis, an inferior QOL score was reported for patients with aGVHD (p=0.002), cGVHD (p<0.001), QOL decreased with increasing age (p=0.048) and increased with time elapsed since allo-HSCT (p<0.001).

Although allo-HSCT can often be the only curative treatment option, it concurrently represents an important intervention into the overall integrity of the organism. In particular, the development of GVHD can cause very serious organ, but also mental problems which can then significantly reduce the overall QOL. Although gradual improvement and regression of these complications occur, it may take many years. All patients should be well informed not only about the risks of treatment failure, organ complications or possible death, but also about chronic psychological consequences and the expected deterioration in the quality of life.

Supported by IGA of the Czech Ministry of Health – grant No. NT 11299-6